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a sub thickness image forming device for forming sub thickness images corresponding to the respective plurality of the transmission images of different storage times supplied from the imaging device on the basis of a relationship between a brightness density of the transmission image and a thickness of the connected part; and

a superimposed image forming device for forming a thickness superimposed image of the connected part by adding the plurality of the sub thickness images to each other.

A2

14. (Amended) A connection inspecting apparatus which comprises:  
an irradiation device for applying a radiation to a connected part;  
a scintillator for converting a radiation passed through the connected part to a visible light;  
an imaging device for picking up a transmission image of the connected part generated from the scintillator; and  
an image forming device for forming brightness information on the basis of the transmission image supplied from the imaging device of a first connected part and a second connected part of an object to be inspected which overlap at a part in a thicknesswise direction thereof, and for forming an image of only the second connected part on the basis of the brightness information.

A3

18. (Amended) The connection inspecting apparatus according to claim 17, wherein the image forming device detects a brightness change at an outline position indicated by the outline position information with the use of the brightness information, obtains each position information of one position and the other position in an outline segment of the overlapping part showing a different brightness change from other positions, obtains information on a divide line passing the one position and the other position from the position information, and forms the image of only the second connected part from the brightness information by changing a binarization level at a first region including the first connected part and a second region including the second connected part which are divided by the divide line.

A4

24. (Amended) A connection inspecting method, which comprises:  
applying a radiation to an object to be inspected which has a first connected part overlapping with a second connected part at a part in a thicknesswise direction of the object, and converting a radiation passed through the object to a visible light;  
forming brightness information on the basis of a transmission image of the first connected part and the second connected part in the overlap state which is obtained through the conversion to the visible light; and  
forming an image of only the second connected part on the basis of the brightness information.

A5

26. (Amended) The connection inspecting method according to claim 24, whereby the operation of forming the image of only the second connected part is carried out by:  
obtaining outline position information of the first connected part on the basis of a transmission image of the first connected part with the use of the brightness information;  
detecting a brightness change at an outline position indicated by the outline position information;  
obtaining each position information of one position and the other position in an outline segment of the overlapping part showing a different brightness change from other positions;  
obtaining information on a divide line passing the one position and the other position from the position information; and  
binarizing for a first region including the first connected part divided by the divide line by a level in which only the overlapping part is extracted, and binarizing for a second region including the second connected part by a brightness level of the second connected part obtained when each position information of the one position and the other position is obtained, so that the image of only the second connected part is formed from the brightness information.

A6

29. (Amended) A computer readable recording medium for recording programs to make a computer execute:

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a process of applying a radiation to an object to be inspected which has a first connected part overlapping with a second connected part at a part in a thickness direction of the object;

a process of forming brightness information based on a transmission image of the first connected part and the second connected part in the overlap state which is obtained by converting a radiation passed through the object to a visible light; and

a process of forming an image of only the second connected part on the basis of the brightness information.

A7

31. (Amended) The computer readable recording medium according to claim 29, wherein a program is further recorded for making the computer execute the process of forming the image of only the second connected part which comprises:

a process of obtaining outline position information of the first connected part on the basis of the transmission image of the first connected part with the use of the brightness information;

a process of detecting a brightness change in an outline position indicated by the outline position information;

a process of obtaining each position information of one position and the other position in an outline segment of the overlapping part showing a different brightness change from other positions;

a process of obtaining information on a divide line passing the one position and the other position from the position information;

a process of binarizing for a first region including the first connected part divided by the divide line by a level in which only the overlapping part is extracted, and binarizing for a second region including the second connected part by a brightness level of the second connected part obtained when each position information of the one position and the other position is obtained, so that the image of only the second connected part is formed from the brightness information.

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32. (Amended) The computer readable recording medium according to claim 29, wherein a program is further recorded for making the computer execute the process of forming the image of only the second connected part which comprises:

a process of obtaining outline position information of the first connected part on the basis of a transmission image of the first connected part with the use of the brightness information;

a process of detecting a brightness peak value in an outline position indicated by the outline position information;

a process of obtaining each position information of one position and the other position of an outline segment of the overlapping part with setting the detected peaks as the one position and the other position;

a process of obtaining information on a divideline passing the one position and the other position from the position information;

a process of binarizing for a first region including the first connected part divided by the divide line by a level in which only the overlapping part is extracted, and binarizing for a second region including the second connected part by a brightness level of the second connected part obtained when each position information of the one position and the other position is obtained, so that the image of only the second connected part is formed from the brightness information.

#### IN THE ABSTRACT

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Please replace the original abstract with the enclosed substitute abstract.